



NMR&D News

Navy Medicine Research
and Development

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NMRC Advances Development of Travelers' Diarrhea Vaccine

The Naval Medical Research Center (NMRC) signed a major research agreement with an industry partner to accelerate development of a promising new vaccine against enterotoxigenic E. coli (ETEC), the predominant cause of travelers' diarrhea. Historically, diarrhea has caused substantial illness for deployed military personnel and the disease still has the potential to negatively impact operational missions today.

"We have agreed to share Navy Medicine's depth of expertise and capabilities with Sanofi Pasteur to develop this much-needed vaccine," said Capt. Stephen Savarino, leader of the NMRC research team that invented and put into practice the new vaccine technology. "In turn, our industry partner will commit their extensive resources and technical expertise to expedite its development. We believe this vaccine has the potential to curtail the number and severity of food borne illnesses due to ETEC, and it may also decrease the risk of post-infectious irritable bowel syndrome, which afflicts one in ten who experience travelers' diarrhea."

"...the process from here to vaccine licensure is both long and challenging and is best undertaken with carefully crafted industry partnerships like this one...."

ETEC, a bacteria that causes infectious gastroenteritis and dehydration, has been a major focus of research by the NMRC team for many years. Together with their partners at the University of Colorado (UC) Denver, they developed an innovative vaccine technology that is at the crux of the new four-

year cooperative research agreement between NMRC and Sanofi Pasteur. If this pre-clinical research effort proves successful, it will serve as the basis to launch the full-scale clinical development of a multivalent adhesin-based ETEC vaccine.

"We are pleased to see this cooperative agreement finalized so that our



Capt. Stephen Savarino with Ms. Annette McVeigh, core member of the research team, who supervises activities in molecular biology. Photo by Phil Collins.

joint research can begin," said Capt. Richard L. Haberberger, Jr., NMRC Commanding Officer. "In today's research environment, our successes are enhanced when we can partner, in the discovery phase, with fine academic institutions like the UC Denver. Likewise, the process from here to vaccine licensure is both long and challenging and is best undertaken with carefully crafted industry partnerships like this one with Sanofi Pasteur."

"Clearly, a highly effective vaccine against ETEC would solve a large part of the problem of infectious diarrhea among the military, civilian travelers and children around the globe," said Savarino.

Foodborne diseases, including travelers' diarrhea, have been a scourge of military operations throughout history.

Today, travelers' diarrhea represents the most common communicable disease threat to U.S. and Coalition forces. Acute gastroenteritis is also a serious child health threat in the developing world, accounting for almost 1.6 million deaths annually, according to the World Health Organization. In each of these settings, ETEC is the most common cause of bacterial diarrhea and in severe cases can lead to dehydration and shock when not treated promptly and effectively.

The Naval Medical Research Center is a premier research organization and headquarters for Navy Medicine's research and development enterprise whose mission is to devise operationally relevant medical research solutions for the military. NMRC focuses on finding solutions to both traditional battlefield medical problems, such as bleeding, traumatic brain

injury, combat stress and naturally occurring infectious diseases, as well as health problems associated with non-conventional weapons. In the area of infectious diseases, vaccine solutions are sought for infections with the greatest potential of adversely affecting military operations, and include diarrheal diseases, malaria and dengue fever. Working the R&D and acquisition process through the U.S. Army Medical Research and Materiel Command, the Walter Reed Army Institute of Research, NMRC and the network of overseas Army and Navy medical research laboratories, the U.S. military has a long, proud history of vaccine and drug development against tropical diseases, including now licensed vaccines against typhoid fever, Japanese encephalitis and hepatitis A.

New War Fighter Performance Lab in Development at NHRC

By MC2 (SW/AW) John Scorza

The Naval Health Research Center's (NHRC's) War Fighter Performance Lab recently began testing a Virtual Environment (VE) system used to study and improve the war fighter, including SEALs from Naval Special Warfare.

The research facility's VE is one of 15 in the world and one of only three in the United States.

The VE is a biomechanics and exercise physiology lab on a motion platform that can pitch, yaw and roll by 25 degrees. On the platform is an integrated split-belt (side-by-side) treadmill and instrumented force plates to measure the pressures applied during walking, running or marching. In front of the motion platform is a nine-foot-tall screen that curves 180 degrees around the platform to view programmed simulations. The environment is also equipped with a full-motion capture sensor to record the subject's movements. These movements are picked up from reflective markers similar to the ones used in making video games.

"By placing little reflective markers all over their body, you can record exact movements in real time," said Senior Chief Damage Controlman Eric Duckworth, Lab Manager. "The markers control the interaction between the subject and the computer program." The system can also be integrated with other equipment such as reduced-oxygen breathing devices to simulate different altitudes.

"The screen is used so we can create an immersive environment for people to move in," said Lt. Jamie Bartlett, Operations Officer. "Right now we have eight programs, including a virtual Afghanistan, where we can perform studies as if the war fighter was out in the field. The platform moves in sync with the terrain, so when they see an incline they feel an inclination of the platform while moving on the treadmill belt. It feels realistic."

"We intend to use virtual environments as a research platform to

immerse subjects in realistic military environments and see how they perform," said Bartlett. "For example, load carriage is a big issue now. We can test a subject in full battle rattle, with a 150-pound pack on his back and walk at patrol pace in Afghanistan terrain. While moving in this environment, not only can we examine the effects of load and fatigue on the body, we can also see how they do performing cognitive tasks such as land navigation, working memory, identifying targets or using a first-person shooter type of simulation."

Experts agree that although all war fighters will benefit from VE research, personnel within the Special Operations Forces may see the greatest impact from the research.

"The VE will be critical for studying groups who continually operate in diverse and extreme environments such as SWCC and SEAL units," said Bartlett. "The changing demands of their duties make them one of the military's most complex weapon systems and now we have the ability to keep up."

"This lab is very unique," said Capt. Lanny Boswell, Head of War Fighter Performance. "We can immerse a war fighter in a virtual reality and measure his physical and cognitive performance simultaneously. Once this is fully developed we can study operationally relevant issues in a controlled environment. The VE research will be used to optimize war fighter capabilities as well as advance the rehabilitation of wounded warriors."

Naval Special Warfare is a maritime component of U.S. Special Operations Command and the Navy's special operations force. The community is composed of more than 6,700 personnel, including 2,300 SEALs, 600 Special Warfare Combatant-craft Crewmen (SWCC), along with military support personnel, reserve components and civilian staff. SEALs and SWCC focus on missions involving unconventional warfare, direct action, combating terrorism, special reconnaissance, foreign internal defense, information warfare, security assistance, counter-drug operations, personnel recovery and hydrographic reconnaissance.



Senior Chief Damage Controlman Eric Duckworth tests a computer program on the new Virtual Environment system at NHRC. The Virtual Environment system is one of 15 in the world and one of three in the U.S. and will be used to help study and rehabilitate war fighters. Photo by Mass Communication Specialist 2nd Class John Scorza.

Commanding Officer's Message

Greetings,

The Maritime strategy includes an emphasis on the use of "soft power" to counter terrorism and to deliver humanitarian assistance. I think in many ways, Navy Medicine's R&D laboratories are major contributors in the soft power arena – we focus our research efforts on operational medicine and readiness, but through our partnerships with universities and private industry we share our technology and knowledge to bring health and wellbeing to many, and we touch the lives of people around the world.

Our research continues to unfold with ever-increasing success and unquestioned high acclaim in partnerships with other federal agencies and non-federal collaborations. Non-federal collaborations are promoted through an extremely successful and active technology transfer program with universities and private industry. The story in the newsletter that highlights the agreement with an industry partner to accelerate the development of a promising new vaccine against travelers' diarrhea is an example of the cutting-edge technology developed by our research teams. The process to vaccine licensure is both long and challenging and is best undertaken with carefully crafted partnerships. Foodborne diseases like travelers' diarrhea have been a scourge of military operations throughout history, and even today have the potential to impact deployed forces in Iraq and Afghanistan. They also afflict children in developing countries and account for almost 1.6 million deaths annually. Our research is aimed at helping Sailors and Marines stay healthy, and we have the potential to save young lives around the world.

We are focused not only on the medical issues associated with conventional battlefields, but also on the potential use of weapons of mass destruction and terrorism against our military forces and our citizens. Bone marrow transplant is an area of research for NMRC and our researchers to support humanitarian efforts using medical technology the research team developed; this is the same technology used to provide rapid and effective marrow rescue to treat military or civilian causalities exposed to a marrow toxin. Exposure to radiation and chemical agents used in modern warfare can cause unrecoverable damage to bone marrow, breaking down the immune system.

Many of the technologies we are developing have affected the lives of millions around the world in the form of vaccines, hand-held assays, molecular diagnostics and confirmatory analysis. Navy-supported medical research efforts have influenced the civilian use of medicine, assisted the Ministries of Health in developing countries and provided technology for other federal initiatives.

Commanding Officer sends,
Richard L. Haberberger, Jr.
CAPT, MSC, USN



NAMRU-SA Asked to Participate in Navy Week – San Antonio

As the Navy plans for the 2010 Navy Weeks season that will span 20 cities across the nation, the April 15-25 event in San Antonio will highlight Navy Medicine assets including the Naval Medical Research Unit - San Antonio (NAMRU-SA). The laboratory was asked by the Navy Office of Community Outreach to provide speakers and poster presentations for local high schools and colleges.

"This is a great opportunity and we are certainly looking forward to being part of this Navy effort here," said Capt. Vincent DeInnocentiis, the NAMRU-SA Commanding Officer. "We will be working with the Navy Office of Community Outreach to set up speaking engagements and poster presentations

so we can talk to the young people of our community at some of the high schools and colleges and let them know how we support the Navy through our research and what a future career as a Navy Medicine researcher could mean for them."

NAMRU-SA was commissioned May 6, 2009. It is the latest subordinate command under the Navy Medicine Support Command (NMSC) in Jacksonville, Fla. and reports to NMSC via the Naval Medical Research Center (NMRC) in Silver Spring, Md. NAMRU-SA brings together the Naval Health Research Center Detachment Directed Energy Bioeffects Laboratory, the Naval Institute for Dental and Biomedical Research in Great Lakes, and the

NMRC Combat Casualty Care research function.

A formal schedule of events for the San Antonio Navy Week has not yet been released.

Navy Weeks are designed to showcase the Navy's talented people and its broad-ranging capabilities in areas where there is little or no everyday Navy presence.

"Navy Weeks are turbo-charged in 2010," said Cmdr. Rick Haupt, director, Navy Office of Community Outreach. "Navy Weeks are based on a broad partnership with Navy Recruiting Command, the fleet, the Navy Reserve and Navy Installations Command as well as a broad array of local community organizations and leadership."

CRADA Outreach to Potential Partners at EMS Today Expo 2010

The process of moving research advances and innovations from the laboratory bench to benefit the warfighter and the country means reaching out to potential partners who can help develop the final products that will save lives.

At the EMS Today Expo 2010, held in Baltimore in March, the technology transfer business program manager from the Naval Medical Research Center shared information with potential business partners and discussed future cooperative partnerships with interested conference attendees.

"This was a great opportunity to promote our labs' interests, technologies and accomplishments," said Roxanne Charles, Cooperative Research and Development Agreement (CRADA) program manager. "We are



Ms. Roxanne Charles, left, provides information to conference participants.

making available our laboratories' most important developments to private industry, large and small companies, so we can work together on the next significant steps in developing products that will save lives on the battlefield and in our healthcare facilities. We will work with these potential partners to further our research and development efforts."

Ms. Charles was providing information about some of Navy Medicine's technologies that are relevant to the Emergency Medical Services (EMS) market. The Navy Medicine exhibits included the "Noise Reduction Stethoscope" developed at the Naval Submarine Medical Research Laboratory, the "Fluorescence Polarization Instruments & Methods for Detection of Exposure to Biological Materials" from the Naval Institute for Dental and Biomedical Research and the "Non-Coagulative Vascular Shunt" from the Naval Medical Center San Diego. Navy representatives engaged with a wide range of expo participants who represented first responders, emergency medical technicians, and small and large businesses operating in the EMS community.

"During the week I talked to many attendees about Navy medical research and development - they seemed very interested and we have

already begun hearing from some of them who are interested in collaborating with the Navy," said Ms. Charles.

NMRC's Office of Legal Technical Services establishes formal working agreements to collaborate with private companies, universities and medical centers to move promising technologies from the bench to the battlefield and bedside.

NMRC has over 300 active CRADAs and currently has 75 patent applications pending at the U.S. Patent and Trademark Office and 70 issued patents. They include DNA-based vaccines for dengue fever, malaria and anthrax. Many of these technologies have been licensed and are in various stages of clinical development. NMRC also has a large portfolio of technologies currently available for licensing.



Ms. Charles, right, discusses opportunities with conference participants.

NMRC Continues its Clinical Investigation Lecture Series

The March lecture in the ongoing series sponsored by the NMRC Clinical Trials Center and Office of Research Administration featured Mr. Joe Griffin, Senior Regulatory Counsel in the Office of Medical Policy, Center for Drug Evaluation and Research (CDER), U.S. Food and Drug Administration (FDA).

Mr. Griffin is responsible for several ongoing policy initiatives related to FDA oversight of clinical research, good clinical practices and protection of human subjects in clinical research. He formerly served as the CDER counsel to the CDER's Division of Scientific Investigations (DSI). In that capacity, he advised on enforcement

actions initiated by DSI, including proceedings to disqualify clinical investigators from further involvement in the conduct of investigations regulated by the FDA and warning letters issued to investigators to correct noncompliance with applicable regulations.

Mr. Griffin's talk focused on the responsibilities of investigators in the clinical research enterprise and some of the potential pitfalls for investigators.

Next in the series:

- April 23 – Dr. Barbara Rellahan, Team Leader in Division of Monoclonal Antibodies, CDER

- May 14 – Dr. Leslie Ball, Director, Division of Scientific Investigations, CDER

- June – Dr. David DeMets, University of Wisconsin.

The following speakers are tentatively scheduled to appear when the series resumes in the fall:

- Ling Chin, Senior Medical Officer, Safety Pharmacovigilance Team Leader
- Briggs Morrison, Pfizer, Co-Chair of The Clinical Trials Transformation Initiative Steering Committee
- Jane Reese-Coulbourne, Interim Executive Director, Reagan-Udall Foundation.

Infectious Diseases Seminar Features Dr. Patricia Guerry



The Naval Medical Research Center's Infectious Diseases Directorate (IDD) sponsored a seminar on the

polysaccharide antigens of *Campylobacter jejuni* March 19. The featured speaker, Dr. Patricia Guerry, is "...the number one researcher on campylobacter in the United States, if not the world," according to Dr. Alison O'Brien, former President of the American Society for Microbiology. Dr. Guerry was awarded the Partnership for Public Service 2009 Service to America Medal for Science and Technology in acknowledgment of her work to develop a Campylobacter vaccine.

Food-borne illness strikes more than 76 million Americans a year and hundreds of millions worldwide. Its most common cause in the U.S. is the

Campylobacter microbe, although the disease poses a far greater risk in the developing world. Campylobacter is a major cause of diarrhea in travelers, including deployed military personnel. Symptoms include diarrhea, fever, abdominal cramps, headache and muscle/joint pain. The disease can lead to irritable bowel syndrome, inflammatory bowel disease, reactive arthropathy, and Guillain Barre syndrome (GBS) – in fact, campylobacter is the leading cause of GBS. Sources of the disease include contaminated water, dairy, and poultry products.

Campylobacter was first shown to be a major cause of human diarrhea in the late 1970s and subsequently became a hot topic for scientific research. Although Campylobacter is a challenging organism to study, sustained funding from the military allowed Dr. Guerry and her group to continue to study this important pathogen. Over the past three years, the rate of her research has been progressing at a

rapid pace. Working with Canadian chemist Mario Monteiro, Dr. Guerry's group has advanced a vaccine through a series of tests that culminated in a definitive laboratory trial in 2008 conducted at the Naval Medical Research Center Detachment-Peru by Cmdr. Eric Hall. The vaccinated laboratory models were completely protected from intestinal disease when challenged with this debilitating microbe. Dr. Guerry has already marshaled the resources for production of a vaccine under current Good Manufacturing Practice conditions that could be used in human trials in the next few years.

Dr. Guerry holds a Ph.D. in Microbiology from the University of Maryland and has been Chief of the Molecular Biology and Biochemistry Branch in the IDD's Enteric Diseases Department since 1988. She also serves as an adjunct associate professor in the Department of Microbiology and Immunology at the Uniformed Services University of the Health Sciences.

Uniformed Services University Recognizes NMRC Residents

By Cmdr. Eric Elster
NMRC Senior Staff Scientist

Lt. Kristin Stevens, Medical Corps, U.S. Navy, was recently awarded the Joseph H. Baugh Resident Award in Clinical Research for research entitled, "Bayesian Modeling of the United States Renal Data System Pre-Transplant Variables Accurately Predicts Graft Survival" at the 30th Uniformed Services University Surgical Associates Day. Lt. Stevens is a general surgery resident at Naval Medical Center San Diego who is spending her research year with the Regenerative Medicine Department at the Naval Medical Research Center. Her work focused on creating a computer-based model that could accurately predict renal graft outcomes with a particular focus on identifying poor donor and recipient matches. This "tool" could assist in matching for improved kidney transplant and outcomes. This work was

accomplished under the mentorship of Cmdr. Eric Elster, Medical Corps, U.S. Navy and Dr. Trevor S. Brown of NMRC.

At the same meeting, Capt. John Christopher Graybill, Medical Corps, U.S. Army, received the Charles A. Hufnagel award for basic science for his paper entitled, "Lymphocyte Depletion in Experimental Hemorrhagic Shock in Swine." This Office of Naval Research funded work, mentored by Dr. Douglas Tadaki of NMRC and Cmdr. Elster, focused on improving survival

after shock in a large animal model by modulating the immune response, introducing a new paradigm in trauma care. Capt. Graybill is a Walter Reed Army Medical Center (WRAMC) resident who spent his research year with the Regenerative Medicine Department. Surgical residents from both WRAMC and the National Naval Medical Center who have worked at NMRC in the Regenerative Medicine Department have won both regional and national awards and represent the future of military surgical research.

World Malaria Day - April 25, 2010

April 25 is a day of unified commemoration of the global effort to provide effective control of malaria around the world.

Malaria, caused by the protozoan Plasmodium, is responsible for more suffering and death across the world than any other parasite. It is a mosquito-borne infection that kills up to 1 million people annually, most of them children under the age of 5. Even when a person survives malaria, the infection can incapacitate a victim for several weeks. Over three billion people, most living in tropical regions, are exposed to malaria, and 500-600 million clinical infections occur every year.

Marrow Donor Recruitment Program Provides a Chance at Life

By Micah Garbarino
Tinker AFB Public Affairs

Chances? When you're an 11-year-old girl dying of acute myeloid leukemia, chances are like branches extended as you're being swept downstream in a torrent, or a foothold on a treacherous climb.

For many people, the best chance to live through leukemia comes in the form of a marrow transplant from a genetically matched donor. A small Department of Defense unit, based out of office and lab space in Rockville, Md., deals in these special chances.

With the help of a donor from the Department of Defense's C.W. Bill Young Marrow Donor Recruitment program, the young girl found a bone marrow donor.

The girl's donor, Brion Ockenfels, an environmental public affairs specialist from the 72nd Air Base Wing Public Affairs office, registered in the DoD Marrow Recruitment donor Program in 1994, the same year his recipient was born. Years later, Mr. Ockenfels never expected the call to come that he was a match for patient thousands of miles away.

"As long as a person is willing to fight, why wouldn't I volunteer to help them do it? It cost me nothing and we are only in these bodies for a short time," Mr. Ockenfels said.

A match for donors can be rare, said Dr. Robert Hartzman of the Naval



AC2 Jerelyn Alvis, left, and AC2 Richard Morton swab for DNA samples during a bone marrow drive aboard the USS Theodore Roosevelt. Photo by MC2 Joshua Bruns.

Medical Research Center and director of the DoD Marrow Donor Program. With more than 600,000 donors on file, 500 of those were matched with a patient and donated bone marrow last year.

This year, one of those people will be another member of Team Tinker. Maj. Craig Punches, commander of the 422nd Instrument Squadron, first registered for the program eight years ago. He is currently going through testing, evaluations and approvals before his scheduled donation date at the end of March.

Solid bone marrow matches are based on genetic typing found through the Human Leukocyte Antigen. There is a 30 percent chance that one of the patient's siblings is a suitable donor. Those chances are shrinking with the smaller sizes of American families, said Dr. Hartzman, a physician and retired Navy captain, who helped develop much of the genetic mapping used for marrow transplants.

The DoD program was founded in a 1990 initiative by Florida congressman C.W. Bill Young, who knew a young woman who died waiting for a donor. Then, it was not possible to find a donor outside the family. What makes the military a good place for such a program?

First, everyone in DoD is willing to give of themselves – a "fundamental volunteerism," Dr. Hartzman calls it. Second, the department is full of young, healthy people who are optimal donors and able to undergo the donation process.

Donor registration drives are conducted at military installations across the globe and even naval vessels at sea. Volunteers register by submitting their personal information and a cheek swab that provides their HLA type. Once the donor has registered, the DoD safeguards all their personal information, and only their HLA type, associated with an ID number, is shared with the National Marrow Donor Program.

When a patient has a need for a

marrow transplant, and the match happens to come from within DoD, then Dr. Hartzman's organization acts as liaison between the national program and the military donor's command. When the command approves the donation, the member begins the physical evaluation – which Maj. Punches is currently doing.

Once the physical assessment is complete, donation can be done in one of two ways. The most common procedure takes 45 minutes to an hour. There is no risk involved, but it is uncomfortable, Dr. Hartzman said. After a general or epidural anesthesia, doctors go into to the pelvic bone through the hip to remove liquid marrow with a needle. This is how Maj. Punches expects to donate.

"Everyone reacts differently to the procedure, but most say that for a couple of weeks it feels like you fell on the ice," Dr. Hartzman said.

The second way is to give the donor a series of shots that increase the number of mature blood stem cells in the blood stream. The cells are then harvested in the same way that blood platelets are at a blood donation center.

"This is about as selfless a thing you can do, reaching out to someone you probably will never meet and giving them their best shot at life. A big thank you for all the donors and their commands," Dr. Hartzman said.

After Mr. Ockenfels' donation transplant, the 11-year-old shared four more years of life with her family and even helped conduct marrow recruitment drives in her community. She was happy to have had a chance, her mother tearfully told Mr. Ockenfels after her daughter's death at the age of 15.

Patient survival rates for a matched, unrelated donor transplant range from 20-90 percent based on a variety of factors.

"What if it was my child, my spouse, my parent? What would I give to have just one more minute with them?" Maj. Punches said.

Upcoming Marrow Donor Recruitment Drives

Marrow donor recruitment drives will be held at the following sites in April:

- April 10, 2010: Barnes Air National Guard Base, Mass.
- April 15: Hill Air Force Base, Ut.
- April 19 – 23: Japan (marrow donor drives at military bases throughout Japan, all services)
- Last week of April: USS Stephen W. Groves (FFG 29), Norfolk, Va.

In addition, potential donors can be tested at the following sites on an ongoing basis:

- The National Naval Medical Center, Bethesda, Md. - Available from 7:00 a.m. to 3:00 p.m. Monday through Friday in Building 9, Room 2475 Main Laboratory. For further information, call HM1 Stewart, 301-295-2100.
- Walter Reed Army Medical Center, Washington, D.C. - Available Monday-Friday from 9:00 a.m. to 3:00 p.m. at the Blood Donor Center. For further information, call 202-782-4156.
- Naval Medical Center, San Diego, Calif. - Available Monday-

Friday from 7:00 a.m. to 3:00 p.m. Register at the Hospital Blood Donor Center. For further information, contact HM1 Jesse Brooks, 619-532-6656.

- Naval Hospital Camp Pendleton, Calif. - Available Monday-Friday from 9:00 a.m. to 3:00 p.m. at Camp Pendleton Hospital Main Laboratory 1st deck building H-100. For further information, contact HM3 Debra Couch or Ms. Alesia Williams, 760-725-1503/1502.

- Naval Air Station Jacksonville, Fla. - Available Tuesday-Thursday from 9:00 a.m. to 1:00 p.m. at Naval Hospital main laboratory. For further information, contact LT Tony Illana, 904-542-9433.

- Wright Patterson Air Force Base, O. - Available Monday-Friday from 9:00 a.m. to 2:00 p.m. at the Hospital Blood Donor Center or in conjunction with scheduled mobile blood drives. Call: Ms. Bernice Loiacono, 937-257-0580/DSN 787 or A1C John Hezel, 937-257-9374/DSN 787.

Hail and Farewell

Hail to:

- Mr. Charles Redmond, the Naval Medical Research Center's new Chief Information Officer.
- Ms. Doris Ryan, who recently joined NMRC as its new Public Affairs Officer.
- Ms. Shelby Gifford, NMRC's new Deputy Comptroller.

Farewell to Mr. Henry Buckley, who is leaving his position as NMRC's Base Realignment and Closure (BRAC) Manager.

- Lackland Air Force Base, San Antonio, Tex. - Available Monday-Friday from 9:00 a.m. to 3:00 p.m. Register at the 37th Medical Group, 1920 Biggs Ave, Building 2506, Lackland AFB. For further information, contact Maj Rachelle Hartze, 210-671-9423.

- Fort Sam Houston, Tex. - Available at the Akeroyd Blood Donor Center. Contact the Blood Donor Center, 210-295-4523, for further information.

Greetings from the NMRC Ombudsman!

Beware Retail Therapy

Spring is in the air and sales are on every corner! While many of us enjoy some retail therapy from time to time to cheer ourselves up, boost self-confidence, cope with a stressful situation or because the weather is beautiful outside, it's important to have a financial plan so that shopping doesn't blow our budgets and bring about unwanted stress. Fleet and Family Support Services (FFSC) can provide you with personal financial counselors to assist with gaining control of your finances. Call your local FFSC and let them help you get on track.

The New Parent Support Program

New babies are very special blessings to a household, but can also provide a lot of challenges. This is especially true for military families who find themselves far away from their extended families. For these families, the military has developed the New

Parent Support Program (NPSP). The program helps parents — including expecting parents — develop the skills they need to provide a nurturing environment for their children. The NPSP is staffed by nurses, social workers and/or home visitation specialists. Benefits include home visits, hospital visits, prenatal care, parenting classes, play groups and referrals to resources. Enrollment is through the Family Advocacy Program at www.militaryhomefront.dod.mil.

(Click on "Military Installations" on the left menu, then scroll and select "NPSP" in the box under "Programs and Services.")

Homecoming

It is very important that as we all have more and more friends and loved ones who serve our country on Individual Augmentee (IA) assignment, we prepare ourselves not only for their departures, but their homecomings as

well. Sailors can be dealing with a lot of emotions when they return home such as anger, fear, stress and withdrawal. It is important that we as loved ones are prepared for these common reactions and handle them appropriately. Begin with your FFSC Individual Deployment Support Specialist (IDSS), who will guide you through the entire reintegration process. In addition, there are programs available from FFSC such as the Yellow Ribbon Reintegration Program (<http://www.yellowribbon.mil>) and Returning Warrior Workshop (http://www.ia.navy.mil/rww_dates.pdf). Also check out the podcast from afterdeployment.org called "There and Back" (<http://www.afterdeployment.org/adpodcast/pdf/ThereAndBack.pdf>).

If you need more information on these or any other resources, please feel free to contact me at 217-722-4981 or angela.prouty@med.navy.mil.

Angela Prouty
Ombudsman, NMRC

Who We Are: NMRC's Bone Marrow Research Directorate

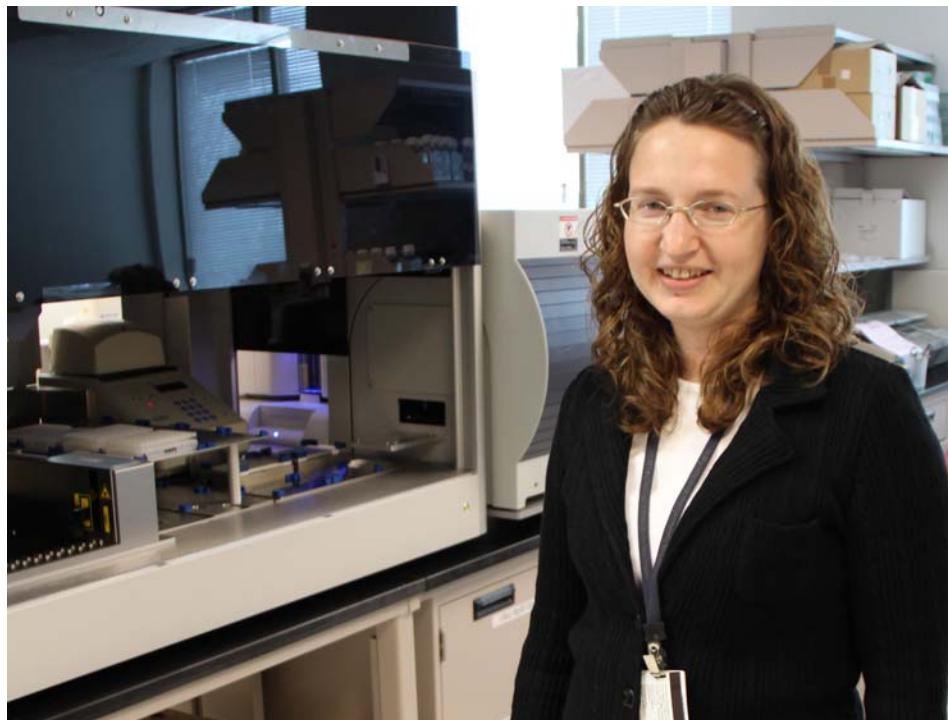
Last August a Sailor on board USS Harry S. Truman (CVN 75) showed another side of the Navy's fighting spirit beyond the bulkheads of his ship. Aviation Boatswain's Mate (Handling) 1st Class (AW/SW) Erwin Martin donated his bone marrow cells to a 15-year-old boy diagnosed with Myelodysplastic Syndrome.

The NMRC Bone Marrow Research Directorate (which includes the C.W. Bill Young Marrow Donor Program) supports humanitarian efforts using medical technology the research team developed; this is the same technology they would use to provide rapid and effective marrow rescue to treat military or civilian casualties exposed to a marrow toxic injury. Exposure to radiation and chemical agents used in modern warfare can cause unrecoverable damage to bone marrow (the blood-forming organ), breaking down the immune system. Today, we face not only the medical threats associated with conventional warfare,

but also the potential use of weapons of mass destruction and terrorism against our military forces and our citizens.

For more than 35 years, Navy Medicine researchers have focused on the set of genes that influence whether an organ transplant, especially bone marrow, is accepted or rejected. The gene set of greatest concern in marrow transplants is called Human Leukocyte Antigen (HLA). Military casualties may be rescued using HLA matched platelets and, in the most severe cases, marrow donations.

The key to Navy Medicine's success has been a fundamental understanding of the genetics of transplantation, the pioneering efforts in the science and technology of DNA based typing, and an intimate understanding of clinical transplant requirements and of the operation of the national and international systems for searching for and matching patients and donors.



Carly Massaberg, supervisor of the high-volume HLA test laboratory in Rockville, Maryland, is standing by an automatic testing device that processes samples in the lab. This advanced technology, together with many other scientific and technologic advances, allows the Bone Marrow Research Directorate Team to quickly type samples and add them to the Department of Defense and unified national file of volunteer potential marrow donors maintained by the National Marrow Donor Program. Photo by Dr. Robert Hartzman

The directorate provides support and oversight to the National Marrow Donor Program (NMDP) and the Department of Defense program to recruit volunteer donors. Eligible volunteers under the DoD program include all active duty military members and their dependents, DoD civilians, Coast Guard, National Guard and Reservists ages 18 to 60 and in good health. A blood sample or buccal swab is taken and the samples are sent to the C.W. Bill Young/DoD Marrow Donor Program laboratory in Washington, D.C.

Last year the NMDP added nearly 700,000 new volunteer donors; 50,000 are from the DoD program and NMDP supported over 4,900 clinical transplant procedures, 502 involving volunteer DoD marrow donors.

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Please contact the Public Affairs Officer at 301-319-9378 or svc.pao.nmrc@med.navy.mil with questions or to submit an article.

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